STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF DECEMBER 8-9, 2022
Prepared on November 21, 2022

ITEM NUMBER: **8**

SUBJECT: **Site Cleanup Program Update**

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KEY INFORMATION

Key Function:	Accomplish remediation of chemical discharges polluting and threatening to pollute water resources.
Key Roles:	Require site investigation and remediation associated with chemical discharges. Provide technical review and quality assurance to ensure that proposed plans for investigation and remediation will succeed.
Number of Cases:	As of November 21, 2022, the Site Cleanup Program manages 136 cases in the Central Coast Region.
Program Manager:	Greg Bishop, Senior Engineering Geologist
Program Staff:	2 Senior Engineering Geologist Supervisors, 6 Engineering Geologists, 2 Water Resource Control Engineers

ACTION: **Informational Item**

SUMMARY

This is an informational item to provide an update on the Central Coast Water Board's Site Cleanup Program (SCP). The SCP is responsible for providing technical and regulatory oversight for the investigation and cleanup of sites that are the result of recent or historical discharges of pollutants to the environment (including soil, groundwater, surface water, soil gas, indoor air, and sediments). SCP is actively managing 136 sites of various types that include dry cleaners, industrial manufacturing and maintenance sites, auto repair and painting facilities, waste storage areas, printing shops, machine shops, oil fields, bulk transfer facilities, refineries, pipeline facilities, rail yards, equipment supply facilities, metal plating facilities, pesticide and fertilizer facilities, ordnance manufacturing facilities, and many others. Pollutants encountered at the sites are diverse and commonly include solvents (e.g., trichloroethylene (TCE) and perchloroethylene (PCE)), petroleum hydrocarbons (e.g., gasoline, diesel, crude oil), pesticides, and heavy metals. The SCP also addresses emerging contaminants, such as per- and polyfluoroalkyl substances (PFAS). Most SCP sites are focused on addressing groundwater contamination issues that often take years or decades to clean

up. The SCP's highest priority is to protect public health, especially to ensure safe drinking water and to mitigate chemical vapor intrusion into residential and commercial buildings. Item 9 included in the agenda provides an update on PFAS in the Central Coast Region.

DISCUSSION

Site Cleanup Program Process

The seven basic steps of site cleanup include the following:

1. Identification of known or potential discharges threatening groundwater based on local agency referrals, complaints, review of available water quality data, assessment of other cleanup cases (e.g., existing nearby SCP or underground storage tank [UST] sites indicating other sources of contamination), etc.

2. Preliminary site assessment to confirm a discharge and identity responsible parties (RPs); identify affected or threatened waters of the state and their beneficial uses (e.g., polluted drinking water wells); and develop preliminary information on the nature and extent of a discharge and associated impacts.

3. Implementation of interim corrective actions to cease a discharge, remove the primary source of pollutant mass (e.g., soil contamination), and mitigate health threats. Interim corrective actions could include soil excavation or other source area remediation activities to remove pollutant mass and prevent ongoing migration which may result in increased investigation and cleanup costs if left unabated; the provision of replacement water or treatment for impacted drinking water supply wells; and the mitigation of chemical vapor intrusion into buildings to protect public health.

4. Comprehensive assessment of soil and groundwater impacts to determine the source, nature, and extent of a discharge more definitively as the basis for selection, design, and implementation of cleanup and abatement actions and ongoing monitoring. Assessment routinely occurs in a phased or stepwise approach. A risk assessment may be conducted to evaluate site-specific receptors and exposure pathways and to determine cleanup goals.

5. Evaluation of feasible cleanup and abatement actions and the proposal and design of a preferred and effective approach and associated implementation schedule to achieve cleanup (i.e., remedial action plan). At low-risk SCP sites, ongoing monitoring to confirm containment of contaminants and attenuation may be determined to be the most appropriate action.

6. Implementation and monitoring of selected cleanup and/or abatement actions to confirm the short- and long-term effectiveness of implemented actions.

7. Closure of a SCP case after cleanup goals have been achieved at the site.

Applicable Regulations, Plans, Policies, and Procedures

Division 7 of the California Water Code (CWC)[1] provides the State Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Boards (Regional Boards), collectively known as the Water Boards, the legal authority to require site investigation and cleanup actions. The Regional Boards provide regulatory and technical oversight of dischargers' (i.e., responsible parties') activities pertaining to the investigation and cleanup of pollution at sites to ensure that the dischargers clean up and abate the effects of discharges in a manner that promotes attainment of either background water quality, or the best water quality that is reasonable if background levels of water quality cannot be restored. Responsible Parties (RPs) include any person(s) who caused or permitted a waste discharge, but also include past or current property owners that were not directly involved in the discharge of waste. For most active SCP cases, the past and current operators and property owners (including interim owners, lessees, successor corporations, and dissolved corporations) are identified as RPs.

CWC Section 13267 Investigations and Inspections[2] – CWC section 13267 authorizes the Water Boards to require dischargers to submit technical or monitoring program reports documenting investigation and cleanup activities.

CWC Section 13304 Cleanup and Abatement[3] – CWC section 13304 authorizes the Water Boards to require any person who has discharged waste into waters of the state in violation of any waste discharge requirement or other order or prohibition issued by the Water Boards, and creates, or threatens to create, a condition of pollution or nuisance, to clean up and abate the effects of the waste, including the provision of replacement water to affected public water suppliers or private well owners. The Water Boards' regulatory tool to implement CWC section 13304 is a Cleanup and Abatement Order (CAO).

CWC Section 13365 Billing and Cost Recovery[4] – CWC section 13365 authorizes the Water Boards to adopt a billing system to recover staff resource costs associated with SCP oversight of investigation, analysis, planning, implementation, or other activities performed by the Water Boards related to the cleanup case.

Resolution 68-16 (Antidegradation Policy)[5] – Adopted by the State Water Board on October 28, 1968, Resolution 68-16 describes the Water Boards' policy to maintain high quality waters in California. The resolution protects waterbodies where existing quality is higher than necessary for the protection of beneficial uses. Under the Antidegradation Policy, any actions that can adversely affect high quality waters must (1) be consistent with maximum benefit to the people of the State, (2) not unreasonably affect present

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[1] https://leginfo.legislature.ca.gov/faces/codes_displayexpandedbranch.xhtml?tocCode=WAT&division=7.
[2] https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=WAT&sectionNum=13267
[3] https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=WAT&sectionNum=13304
[4] https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=WAT&division=7.&chapter=5.&article=7
[5] https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf

and anticipated beneficial use of the water, and (3) not result in water quality less than that prescribed in water quality plans and policies.

Resolution 92-49 (Policies and Procedures for Investigation and Cleanup and Abatement)[6] – Adopted by the State Water Board on June 18, 1992, and later amended in 1994 and 1996, Resolution 92-49 describes the policies and procedures for investigation and cleanup and abatement of discharges described in CWC section 13304.

Basin Plan – The Water Quality Control Plan for the Central Coastal Basin[7] (Basin Plan) is the master water quality control planning document. The Basin Plan designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes implementation programs to achieve water quality objectives and incorporates by reference all applicable Water Board plans and policies and other pertinent water quality policies and regulations.

Environmental Screening Levels[8] – The San Francisco Bay Regional Board developed Environmental Screening Levels (ESLs) to provide conservative site investigation and cleanup screening levels for over 100 chemicals commonly found at sites with contaminated soil and groundwater. The ESLs are not enforceable cleanup levels, nor are they intended to be a cleanup goal. The ESLs are intended to help screen for contaminated sites that are a potential environmental concern. ESLs address a range of media (i.e., soil, groundwater, soil gas, and indoor air) and a range of concerns (e.g., impacts to drinking water, vapor intrusion, and impacts to aquatic life). SCP staff also use site-specific risk assessments to guide cleanup activities. For complex risk assessments, SCP staff may request assistance from the Office of Environmental Health Hazard Assessment (OEHHA).

GeoTracker[9] – Chapter 30 of Division 3 of Title 23 of the California Code of Regulations[10] requires persons responsible for submitting certain reports to the Water Boards or a local agency to submit these reports electronically over the Internet to the State Water Board's GeoTracker database. The GeoTracker database is a map based geographic information system used to manage compliance data for the SCP, Underground Storage Tank (UST), Department of Defense (DoD), Land Disposal, Irrigated Lands, and Oil and Gas Programs. The Waste Discharge Requirements (WDR) and Cannabis Programs are also transitioning to GeoTracker. GeoTracker is the SCP's primary case management tool, which includes electronic copies of correspondence and technical documents, technical data, such as sample location and well coordinates, laboratory analytical results, and groundwater elevations. GeoTracker

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[6] https://www.waterboards.ca.gov/water_issues/programs/site_cleanup_program/resolution_92_49.html
[7] https://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan
[8] https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.html
[9] https://www.waterboards.ca.gov/ust/electronic_submittal/about.html
[10] https://www.waterboards.ca.gov/ust/electronic_submittal/docs/text_regs.pdf

also has a public interface[11] that enables SCP documents and other information to be easily accessible to the public.

Site Cleanup Program Priorities

Drinking Water Protection

The SCP protects human health by protecting groundwater that is a source of drinking water. Sources of drinking water are impacted when contaminant plumes pollute or threaten to pollute nearby municipal or private domestic drinking water supply wells. In cases where impacted drinking water wells exceed the drinking water standard (or maximum contaminant level [MCL]), Water Code section 13304 provides the Water Boards with the authority to require RPs to provide replacement drinking water service, which may include interim bottled water, wellhead treatment or other methods of replacement drinking water, to affected public water suppliers or private well owners.

Vapor Intrusion

The SCP protects human health from the effects of vapors from volatile chemicals intruding into commercial and industrial buildings, residences, and other buildings (i.e., vapor intrusion). Vapor intrusion occurs when vapor-forming chemicals from any subsurface source (e.g., polluted soil and/or groundwater) migrate into an overlying building in a gas or vapor form. Recognition of soil vapor intrusion into buildings and other enclosed spaces occurred in the 1980s because of radon intrusion concerns and associated studies. Subsequently, there was an increasing awareness that anthropogenic chemicals (e.g., petroleum hydrocarbons and chlorinated solvents) in soil, groundwater, and sewers could also pose threats to indoor air quality via a vapor intrusion pathway. The Water Boards did not begin to evaluate vapor intrusion risks at cleanup sites until 2007 and the science behind the vapor intrusion evaluations is continually evolving. SCP staff require RPs to follow specific technical guidelines for sampling soil gas and indoor air and the results are compared to conservative screening levels or to site-specific modeling results to evaluate vapor intrusion risks. Where vapor intrusion is identified as a human health threat, Water Board staff require mitigation measures to reduce vapor intrusion exposure and continued monitoring to confirm indoor air quality is protective of human health based on applicable standards.

Site Cleanup Program Prioritization Strategy

Since 2008, the SCP has implemented a case prioritization strategy on a yearly basis to assist management in 1) distributing work assignments among SCP staff, 2) establishing milestones and goals for each cleanup site, 3) focusing SCP resources on cases with the highest threat to water quality and human health, and 4) tracking SCP performance in moving our high and medium priority sites to lower priority sites and eventual closure.

[11] https://geotracker.waterboards.ca.gov

Three primary site ranking elements are considered: 1) risk to human health and the environment, 2) site and waste complexity, and 3) public participation. Risk to human health and the environment relates to real or threatened impacts to human health and ecological receptors, including surface water and groundwater beneficial uses (e.g., drinking water) and vapor intrusion concerns. Site and waste complexity relates to site and waste conditions, including but not limited to beneficial water uses, geology, hydrogeology, topography, soil type, waste types, plume characteristics, land use, etc. Public participation considers the number of and degree to which people are impacted, as well as the amount of public interest and concern a case presents. Environmental justice, and political and community interests are also considered in the public participation ranking element.

An example of a high priority site is one where there are impacts to drinking water supply wells or demonstrated vapor intrusion risks. Typically, high priority sites also have complex geology and either unknown or significant pollutant distribution. Examples of high priority groundwater sites are the Buckley Road area TCE case and the commingled and geographically related San Luis Obispo Regional Airport PFAS case. A high priority vapor intrusion example is Dutch Maid Dry Cleaners in Santa Barbara. These cases are described in further detail in the SCP Cases section below. An example of a low-risk site is one with a relatively low level of water quality impact and the pollutant distribution is well known and of limited extent. Additionally, low risk sites generally have no significant risk to human health or other environmentally sensitive receptors (e.g., endangered species). Examples of low priority cases include most of the historical crude oil pipeline spills along highways and cleanup cases that are in the last phase of cleanup and those sites that are in the post remediation monitoring phase.

Currently, the SCP has 32 high priority cases and 46 medium priority cases with the remaining cases being low or very low priority. SCP staff spend 90 percent of their time on the high and medium priority cases. Every year we usually have several new cleanup cases, this has generally been balanced by closing cases that eventually achieve cleanup goals. However, in the three years since the last SCP Program Update in 2019, the number of SCP cases has risen from 115 to 136 cases, an 18 percent increase driven partially by new PFAS cases.

The investigation and cleanup of pollutants in the subsurface, particularly groundwater, is often very challenging due to: 1) significant timeframes (year or decades) and costs (hundreds of thousands to millions of dollars) typically required to fully implement assessment and cleanup actions, 2) identifying viable RPs, 3) managing multiple RPs and/or sources of pollutants for adjacent sites or comingled site plumes, 4) complexity associated with fate and transport of pollutants once they are below ground, 5) obtaining offsite access from adjacent property owners to implement investigation and cleanup actions, 6) public opposition to cleanup strategies, and 7) site constraints (e.g., contamination under buildings or roads), treatment technology limitations, or geologic/hydrogeologic constraints inhibiting the ability to fully assess or cleanup pollutants to acceptable levels.

Summary of Site Cleanup Program Cases

As of November 21, 2022, there are 290 active SCP cases within the Central Coast region and currently the Central Coast Water Board is the lead oversight agency for 136 of the 290 cases. The remaining 154 cleanup cases are managed by local agencies such as local county environmental health departments because they are predominately cases where soil is contaminated and not groundwater, and therefore pose a lower threat to water quality. SCP staff frequently consult with local agencies regarding milestone decisions on these projects, such as whether to require groundwater remediation or to confirm case closure. Sometimes local agency cases are transferred to the Regional Board because it is discovered through additional investigation that groundwater impacts are significant or the local agency doesn't have the ability to take enforcement on a recalcitrant RP.

A map showing all the cleanup cases is available on GeoTracker. This staff report focuses on the 136 cases that the SCP currently oversees, a sampling of which includes:

- Forty-five (45) industrial manufacturing facilities, including metal plating facilities, auto repair and paint shops, machine shops, electronic device manufacturing, print shops, illicit drug labs, hazardous waste storage areas. Typical chemical discharges associated with these facilities are trichloroethylene (TCE), perchloroethylene (PCE), 1,4-dioxane, petroleum hydrocarbons, metals.
- Twenty-five (35) former dry-cleaning facilities. Predominantly PCE and Stoddard solvent discharges.
- Nineteen (28) oilfield, refinery, bulk storage, gas plant, railroad, and marine terminal facilities. Predominantly petroleum hydrocarbon and heavy metal discharges.
- Seven (7) historic or active oil pipeline discharges. Predominantly petroleum hydrocarbon and heavy metal discharges.
- Seven (8) pesticide and fertilizer facilities. Predominantly nitrate, ammonia, toxaphene, 1,2,3-trichloropropane (1,2,3-TCP), 1,2-dichloropropane, and endrin discharges.
- Three (3) ordnance and one (1) flare manufacturing facility. Predominantly perchlorate and TCE discharges.
- Ten (10) PFAS cases. Includes four (4) airports and various bulk fuel, refinery, metal plating, and fire training facilities.

From a geographic perspective, SCP cases are located throughout the Central Coast region. However, most of the SCP dry cleaner, industrial manufacturing, and oilfield cases are in Santa Barbara County, most of the oil pipeline cases are in San Luis Obispo County, and the ordnance manufacturing facilities are in San Benito County. PFAS cases are dispersed, but the more significant impacts found to date are at the San Luis Obispo County Regional Airport, south of Tank Farm Road in San Luis Obispo, and at the Santa Barbara Airport.

Of the 136 SCP cases, 55 are currently in the investigation phase with 74 cases in the remediation and post-remediation phases. Over the past five years, SCP staff have successfully closed 25 SCP cases. Most of these cases required over 20 years to achieve cleanup goals and closure because of various challenges.

High Priority Site Cleanup Program Cases

A summary of ten of the Central Coast Water Board's higher priority SCP cases is provided:

Dutch Maid Cleaners, Santa Barbara, Santa Barbara County
Contaminant of Concern - Tetrachloroethylene (PCE)
PCE was discharged from dry cleaning operations into a mixed commercial and residential area of Santa Barbara. Some remediation efforts have occurred, and additional cleanup is being required under SCP oversight. PCE and related chemical vapors associated with soil and groundwater contamination are entering some residences in the area. The Central Coast Water Board is requiring that vapor intrusion mitigation measures be implemented to protect building occupants. In 2021, as part of this effort and to help accomplish remediation, the Central Coast Water Board identified two additional dry cleaners as sources and updated an existing CAO to include these sources and associated RPs.

Tecknit and Tube Holding Company, Inc, Santa Barbara, Santa Barbara County
Contaminant of Concern – Trichloroethylene (TCE)
TCE was discharged from historical industrial manufacturing operations into a mixed commercial and residential area of Santa Barbara. Site investigation activities indicate that TCE impacts to groundwater extend several blocks downgradient from the original source area. On-site contaminant source removal has been achieved using in-situ chemical oxidation at the property boundary and further downgradient remediation is being implemented using enhanced in-situ bioremediation. Indoor vapor intrusion risks were also identified over the last few years and mitigation and sampling is currently in place to protect residents. The Central Coast Water Board issued a revised CAO in 2020 that identifies additional RPs. The next steps include the submittal of a feasibility study by the RPs recommending a remediation strategy for on-site treatment.

TSP Filters, Goleta, Santa Barbara County
Contaminant of Concern – 1,4-Dioxane
A 1,4-dioxane discharge is affecting soil and groundwater in Goleta, threatening a municipal drinking water well downgradient of the site. Since November 2020, the discharger has been implementing a Central Coast Water Board-approved remedial action plan at the site including groundwater extraction with sewer discharge of ozone-treated wastewater. A portion of treated groundwater is reinjected to flush 1,4-dioxane from vadose-zone soils and soil vapor extraction is used to capture, remove, and treat 1,4-dioxane-laden leachate and vapor. In late 2021, the discharger installed sentinel monitoring wells between the downgradient municipal well and the site. Maximum detected 1,4-dioxane concentrations are below the drinking water response level for 1,4-dioxane and have declined over time.

Buckley Road Area TCE Plume, San Luis Obispo, San Luis Obispo County
Contaminant of Concern - Trichloroethylene (TCE)
TCE is polluting groundwater in a mixed residential and industrial area along Buckley Road near the San Luis Obispo County Airport where residents and industrial tenants operate individual groundwater production wells for drinking water and other purposes. The Central Coast Water Board issued a CAO in 2019 that identified responsible parties and directed them to provide replacement water, conduct an additional investigation, perform remediation, and implement other related tasks. Since then, replacement water has been provided to well uses who have TCE exceeding the MCL. Several rounds of additional investigation have identified a TCE source at an adjacent property. Cleanup and abatement requirements are currently under consideration by staff.

San Luis Obispo County Regional Airport
Contaminant of Concern - Per- and Polyfluoroalkyl Substances (PFAS)
PFAS were discharged to the ground surface at the airport from testing and use of aqueous film-forming foam (AFFF) firefighting foam. This has resulted in groundwater impacts to the airport area and the community south and west of the airport (including the area affected by the Buckley Road area TCE plume). Investigations are ongoing and preliminary information indicates that as many as 70 private water supply wells in the area may be impacted by PFAS (above Division of Drinking Water response levels). Continued investigation, implementation of replacement water program(s), remediation, and community outreach associated with these PFAS impacts are a priority for the SCP.

Guadalupe Restoration Project, Guadalupe, San Luis Obispo County
Contaminant of Concern – Petroleum Hydrocarbons
The former Guadalupe Oil Field was operated by Unocal from the 1950s and continued through the early 1990s. As part of Unocal operations, mid-range petroleum used to thin heavy crude oil for pumping conveyance purposes was discharged to a shallow underlying aquifer due to spills and pipeline leaks. Chevron assumed responsibility for the remediation following a merger with Unocal in 2005. The Central Coast Water Board issued a CAO in 1998, and remediation projects that have been completed to date include targeted excavations to remove impacted soil, wetland and dune restoration, and recovery of over one-million gallons of light non-aqueous phase liquid (LNAPL) from groundwater. Chevron implemented enhanced LNAPL recovery programs to recover as much LNAPL as technically feasible before reaching a recoverability endpoint. Chevron is in the preliminary phases of constructing an approved on-site landfill to safely store and treat impacted soil instead of trucking it off-site to a landfill.

Santa Margarita Ranch, Santa Margarita, San Luis Obispo County
Contaminant of Concern – Petroleum Hydrocarbons
Petroleum pipelines that traverse the Santa Margarita Ranch site for 1.8 miles, crossing both Santa Margarita and Yerba Buena Creeks, have resulted in the discharge of petroleum hydrocarbons. Several iterations of subsurface investigations, including the installation of over 50 groundwater monitoring wells, have been performed along the petroleum pipeline alignments. Separate-phase hydrocarbon recovery efforts and

groundwater and surface water monitoring events are performed on a weekly and annual basis, respectively. The Central Coast Water Board worked with the oil company responsible for the pipelines, the landowner, the County of San Luis Obispo, and several interested parties to excavate and remove 53,418 tons of hydrocarbon-impacted soil. The excavation work was completed in 2022. Ongoing activities include the evaluation of confirmation soil sampling, updating land use controls including the use of a deed restriction, and monitoring groundwater.

Scotts Valley Dry Cleaners, Scotts Valley, Santa Cruz County
Contaminant of Concern - Tetrachloroethylene (PCE)
Dry cleaning operations in a commercial area of Scotts Valley discharged PCE to groundwater. Remediation efforts are ongoing with the operation of a soil vapor extraction/air sparge system to remove PCE vapors from the subsurface and a groundwater pump and treat system was previously operated at the site. In 2016, the RP began collecting groundwater samples from existing deep monitoring wells. From 2016 to 2021, Central Coast Water Board staff made significant efforts to facilitate site access. Currently, groundwater monitoring is being implemented to evaluate PCE in groundwater offsite (the wells were acquired in 2022 and were originally installed to evaluate TCE pollution associated with a nearby Watkins-Johnson Superfund site). The offsite groundwater monitoring is a significant milestone toward completing a site conceptual model to inform remediation options. In January 2022, the RPs submitted a supplemental site investigation work plan to further delineate PCE in soil vapor and groundwater. After several scoping meetings, SCP staff concurred with the work plan in May 2022. During its implementation, new high concentrations of PCE in soil vapor and potentially in shallow groundwater were discovered. As a result, an expanded scope of investigation is being implemented with a report anticipated in December 2022.

Former Whittaker Ordnance Facility, Hollister, San Benito County
Contaminants of Concern – Perchlorate, Chlorinated Solvents (primarily TCE), and Hexavalent Chromium
Ordnance product manufacturing and testing facility operations resulted in the discharge of perchlorate, chlorinated solvents (primarily TCE), and hexavalent chromium to soil and groundwater. The facility was operated by various companies from the 1950s until 2010. The 94-acre facility is situated in a geologically complex area between the San Andreas and Calaveras fault zones near the City of Hollister. The RP has completed many phases of soil and groundwater investigations and is conducting ongoing remediation throughout the facility via the operation of two soil vapor extraction systems, an in-situ groundwater bioremediation system, and a groundwater extraction and treatment system to hydraulically control offsite migration of perchlorate, VOCs, and naturally occurring selenium. From 2010 to 2021, the extracted and treated groundwater was discharged to the San Benito River channel in accordance with an individual National Pollutant Discharge Elimination System (NPDES) discharge permit. In 2022, the RP enrolled in the General Waiver for Specific Types of Discharges, Order No. R3-2019-089 and plans to redirect their discharge to a series of injection wells located in the targeted groundwater treatment zone to enhance the cleanup process, or discharge to the Hollister wastewater treatment plant under local permitting

requirements for industrial sources. The RP has also provided replacement water to nearby properties where water has been impacted by offsite migration of TCE. Currently, the RP maintains a treatment system at a nearby well used by the community for landscape irrigation. The RP also facilitated connecting the well for an adjoining property to the City of Hollister public water system to ensure access to safe drinking water.

Olin Corporation, Morgan Hill, Santa Clara County:
Contaminant of Concern – Perchlorate
Flare manufacturing facility operations resulted in the discharge of perchlorate (a soluble salt) into soil and groundwater in Morgan Hill, resulting in a perchlorate plume that, at its largest, extended nearly 10 miles downgradient of the site and to depths over 500 feet below ground surface in three aquifers. Onsite soil remediation, groundwater extraction and treatment, and attenuation through natural physical processes have resulted in a significant reduction of the perchlorate plume, along with reduction in risk to residents who use water from domestic wells in the area. This is demonstrated by fewer domestic wells having perchlorate that exceeds the drinking water standard (or MCL) and thus fewer residences in the replacement water program (RWP). At the onset of the Central Coast Water Board's RWP issued to Olin in 2004, there were 188 wells exceeding the MCL for perchlorate; today there are four. Even with the significant reduction in the RWP, staff work with Santa Clara County Department of Environmental Health, the water district (Valley Water), and Olin Corporation to annually check for new domestic wells installed near the plume and if so, ensures they are sampled for perchlorate. If the MCL is exceeded, a well is included in Olin's RWP. In 2019, Olin initiated pumping at three new lower-volume extraction wells to target a remaining contaminant hot spot more efficiently in the perchlorate plume near the site. In 2021, Olin restarted two high-volume extraction wells to address a rebound of perchlorate above requirements for active cleanup (pump and treat). As part of a data gaps assessment, Olin is currently installing two monitoring well pairs at the downgradient edge of the plume in the deep aquifer.

Public Participation

SCP staff provide opportunities for public participation in the regulatory and technical oversight process so that the public is informed, has the opportunity to provide comments and can participate in the decision-making process. The level of public participation is tailored to site-specific conditions, primarily depending on site complexity, risk, and public interest. The level of public participation for a particular site is based on the potential threat to human health, water quality conditions, surrounding land use and environment; the degree of public concern or interest in site cleanup; and any environmental justice factors associated with the site. Examples of public participation efforts include:

- Distributing factsheets or notices to businesses and residences near SCP sites when a remedial strategy, a CAO, or a closure is going to be implemented, and posting them on our website.

- Deed restrictions for properties where pollutants remain in soil or groundwater at concentrations exceeding water quality objectives when it is not technically or economically feasible to achieve water quality objectives and institutional controls are needed and in place to protect human health and the environment.
- Public meetings or workshops for various stages of high priority cleanup sites.
- Handing out flyers door-to-door for businesses and residences where there are concerns about domestic drinking water supply well impacts above safe drinking water standards and for vapor intrusion risk.
- Notification pursuant to Proposition 65 for situations where there is a substantial risk of injury such as vapor intrusion risks that are unsafe for the public without immediate mitigation or exceedances of the drinking water standard in domestic wells due to a discharge from a SCP site.
- Distributing information on grant funding availability to RPs that may not have sufficient funding to implement site assessment and cleanup actions for their sites.
- Explaining technical reports in plain language to the public.

Funding Mechanisms for Cleanup Sites

There are three general funding mechanisms to pay for SCP staff time and for project implementation in the Central Coast region:

- Voluntary cleanups executed and funded by the RP.
- Obligatory cleanups executed and funded by the RP as required by a CAO.
- Site Cleanup Subaccount Program (SCAP).

State Water Board staff manage SCAP funds and handle distribution of SCAP grant funds. They also handle invoices and collection of “cost recovery” payments to cover billing of staff time for projects funded by RPs voluntarily and under a CAO.

Voluntary Cleanup and Funding

The majority of SCP sites are voluntary cleanups where the RP voluntarily performs the investigation and cleanup by entering into the State Water Board cost recovery program, which compensates the State for staff time performing technical and regulatory oversight. The State Water Board manages the cost recovery program so that reasonable expenses incurred by the Water Boards can be recovered from the RP.

Obligatory Cleanup and Funding Via the Issuance of a CAO

The Central Coast Water Board may issue a CAO requiring a discharger to cleanup and abate waste at an SCP site. In cases where a CAO is issued, the order provides the basis for reimbursement, often via cost recovery as described above.

Site Cleanup Subaccount Program

The Site Cleanup Subaccount Program (SCAP) is a non-competitive funding program established by Senate Bill (SB) 445 (Hill, 2014), allowing the State Water Board to issue grants for projects that remediate the harm or threat of harm to human health, safety, or the environment caused by existing or threatened surface water or groundwater pollution. In the past, SCP was limited to cases that had an identified and financially viable RP. SCAP now provides a separate staff funding source to manage SCP cases without an RP and provides grant funding to implement investigative and cleanup activities. The Central Coast Water Board currently has 1.5 staff who can charge their time spent on non-cost recovery sites to the SCAP fund. The SCAP program provides a unique opportunity for SCP staff to work on cases that do not have an identified RP (e.g., regional pollution that does not have an identified source of pollution), research GAMA GeoTracker for exceedances in supply wells to help identify and track new SCP sites, and to provide assistance to a financially non-viable RP (e.g., bankrupt or financially disadvantaged RP or viable RPs) that needs additional funding to finalize cleanup and allows private entities or the Regional Boards to apply for grants for eligible projects. Eligible projects may include site characterization, source identification, or implementation of cleanup projects that meet the following criteria:

- Project remediates the harm or threat of harm to human health, safety, and the environment from surface water or groundwater contamination.
- Project addresses human-made contaminants.
- Regulatory agency has issued a directive (unless this is infeasible).
- Responsible party lacks financial resources.

The Central Coast Water Board currently has four SCP cases that are funded by the SCAP fund and SCP staff is assisting several RPs to obtain grant funding. Currently, the SCAP fund has an annual appropriation of $34 million through 2025. SB 170 added a one-time increase of approximately $70 million to be spent by June 2026. Staff anticipate new SCP cases in the next few years as new chemicals are detected and found to be a source of groundwater contamination (e.g., PFAS).

Inter-Agency Coordination

As part of the California Environmental Protection Agency (CalEPA), the Water Boards routinely coordinate with DTSC and OEHHA to address SCP cases. While the Water Board's focus is on water quality and vapor intrusion, DTSC focuses on cleanup of hazardous waste sites and soils only cases, and OEHHA focuses on risk assessment.

Local Agency Oversight

SCP staff regularly coordinate with local agencies to manage cleanup sites. In 2021, Assembly Bill 304 (AB-304) amended the Health and Safety Code and required local agencies that administer a cleanup program to present their qualifications to the Water Boards and DTSC and to provide notification of new sites that enter into remedial action agreements. Local environmental health departments from Santa Barbara County,

Santa Cruz County, and Santa Clara County have provided qualification packages to the Central Coast Water Board. In general, the Central Coast Water Board will act as lead agency for sites in the Central Coast region with significant groundwater impacts or threats to groundwater and sites that require enforcement authorities.

Related Water Board Programs

Underground Storage Tank (UST) and Department of Defense (DoD) programs both perform regulatory investigation and remediation functions like the SCP. The UST program handles discharges of petroleum and other hazardous substances from underground storage tank sites, such as and primarily associated with gas stations. The DoD program handles investigation and remediation projects at federally owned properties, such as military bases. The UST and DoD programs are separated from the SCP due to their distinct funding sources and differing administrative requirements.

Human Right to Water

California Water Code section 106.3, subdivision (a) states that it is the policy of the State of California "that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitation purposes." On January 26, 2017, the Central Coast Water Board adopted Resolution No. R3-2017-0004, which affirms the realization of the human right to water and the protection of human health as the Central Coast Water Board's top priorities.

Consistent with the Water Boards' Human Right to Water policy, the SCP has a long history of prioritizing public health and protection of drinking water beneficial uses. There are currently three SCP cases in the Central Coast region where a discharge has impacted domestic drinking water supply wells and/or municipal drinking water supply wells. Two of these cases have existing CAOs that require the RPs to provide replacement water with the third having a CAO in preparation. Staff are currently evaluating three additional cases with nearby drinking water supply well impacts that are currently under investigation.

Environmental Justice

Environmental Justice principles call for the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income in the development, adoption, implementation, and enforcement of all environmental laws, regulations, and policies that affect every community's natural resources and the places people live, work, play, and learn. The Central Coast Water Board implements regulatory activities and water quality projects in a manner that ensures the fair treatment of all people, including underrepresented communities. Underrepresented communities include but are not limited to Black, Asian, Hispanic/Latino/a/e, California Native American Tribes, Indigenous and other people of color, disadvantaged communities (DACs), severely disadvantaged communities (SDACs), economically distressed areas (EDAs), environmentally disadvantaged communities (EnvDACs), and members of fringe

communities.[12] Furthermore, the Central Coast Water Board is committed to providing all stakeholders the opportunity to participate in the public process and provide meaningful input to decisions that affect their communities.

SCP cases are data-driven with priority given to projects that have the highest risk to human health and threat to groundwater quality. If there are impacts to drinking water supply wells or unsafe vapor intrusion conditions from an SCP site, SCP staff are assigned, and priority is given to these cases. SCP staff also utilize CalEnviroScreen to inform public participation on high priority SCP sites. CalEnviroScreen is a mapping tool that uses environmental, health, and socioeconomic information to help identify communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects. Currently, the Central Coast Water Board does not have any sites with drinking water supply well or vapor intrusion impacts in a disadvantaged community, where there is not an identified and viable RP.

Climate Change

The Central Coast region faces the threat and the effects of climate change for the foreseeable and distant future. To proactively prepare and respond, the Central Coast Water Board has launched the Central Coast Water Board's Climate Action Initiative, which identifies how the Central Coast Water Board's work relates to climate change and prioritizes actions that improve water supply resiliency through water conservation and wastewater reuse and recycling; mitigate for and adapt to sea level rise and increased flooding; improve energy efficiency; and reduce greenhouse gas production. The Climate Action Initiative is consistent with the Governor's Executive Order B-30-15 and the State Water Board's Climate Change Resolution No. 2017-0012.

SCP staff consider carbon impacts from proposed investigation and remediation projects against the benefits that those proposed projects will provide relative to the carbon impacts. For example, if an excavation project will have a substantial number of trucks transporting contaminated soil offsite, the emissions from the trucks would be considered as one of many factors as part of a "cost"-benefit analysis before approving

[12] Disadvantaged Community: a community with an annual median household income that is less than 80% of the statewide annual median household income (Public Resources Code section 80002(e)); Severely Disadvantaged Community: a community with a median household income of less than 60% of the statewide average. (Public Resources Code section 80002(n)); Economically Distressed Area: a municipality with a population of 20,000 persons or less, a rural county, or a reasonably isolated and divisible segment of a larger municipality where the segment of the population is 20,000 persons or less with an annual median household income that is less than 85% of the statewide median household income and with one or more of the following conditions as determined by the department: (1) financial hardship, (2) unemployment rate at least 2% higher than the statewide average, or (3) low population density. (Water Code section 79702(k)); Tribes: federally recognized Indian Tribes and California State Indian Tribes listed on the Native American Heritage Commission's California Tribal Consultation List; EnvDACs: CalEPA designates the top 25 percent scoring census tracts as DACs. Census tracts that score the highest five percent of pollution burden scores but do not have an overall CalEnviroScreen score because of unreliable socioeconomic or health data are also designated as DACs (refer to the CalEnviroScreen 3.0 Mapping Tool or Results Excel Sheet); Fringe Community: communities that do not meet the established DAC, SDAC, and EDA definitions but can show that they score in the top 25 percent of either the Pollution Burden or Population Characteristics score using the CalEnviroScreen 3.0.

the project. Sites that are in areas that are susceptible to flooding or sea level rise effects of climate change are also being evaluated to determine if changes in investigation or remediation approaches or schedule are warranted.

CONCLUSION

The goal of the SCP is to protect human health and the environment by reducing risk through the assessment and cleanup of SCP cases in an effective, collaborative, financially responsible, and expedited manner. SCP staff will continue to prioritize resources to focus on the highest priority sites with the objective of achieving cleanup goals and closure, while also identifying and evaluating new sites. The relatively new SCAP funding program provides much needed resources for the SCP with respect to being able to identify new sites and facilitate work on previously languishing sites without a viable RP. SCP staff will continue to develop creative strategies and collaborative relationships with partners, stay up to date with new investigative and cleanup technologies to move cases toward closure in the most expedited and effective manner possible. The SCP goal for the 2022-23 fiscal year is to move four sites from the investigative phase to the remediation phase and to bring six sites to case closure.